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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,121	11/05/2001	William Roeckner	SC11807TS	2853

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MOTOROLA INC
AUSTIN INTELLECTUAL PROPERTY
LAW SECTION
7700 WEST PARMER LANE MD: TX32/PL02
AUSTIN, TX 78729

EXAMINER

JACKSON, BLANE J

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 02/06/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/008,121

Applicant(s)

ROECKNER ET AL.

Examiner

Blane J Jackson

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,7-13 and 15-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-4,7,8 and 23 is/are allowed.
- 6) ☒ Claim(s) 9-13 and 15-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

RESPONSE TO AMENDMENT

Response to Arguments

1. Applicant's arguments filed 11/03/03 have been fully considered but they are not persuasive as regards claims 9-22. The Office interprets that Hoyt does detect if interference is present and based on this detection changes the switching frequency. Hoyt summarizes three embodiments, including the second embodiment that tests for the least distorted output signal, to generate an indicator signal, the switching frequency itself, in context to control a class D amplifier such that the switching frequency or harmonics of the switching frequency do not fall within the tuned AM radio frequency (column 13, lines 12-25).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9, 10, 12-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoyt et al. (EP 1014566 A2) with a view to Graves (U.S. Patent 6,593,807).

As to claims 9, 10 and 16, Hoyt teaches an indicator signal control means for a switching amplifier for use in proximity to a tuner for a first frequency band where the indicator signal control means, coupled to the amplifier, for changing the frequency

indicted by the indicator signal in response to detecting interference from the switching output signal (figure 7, a second embodiment determines the switching frequency as the "indicator signal" and tests for the least distorted output signal of a class D audio amplifier used in an AM radio, column 12, line 27 to column 13, line 25).

Groves teaches a switching amplifier that provides a digital signal at a frequency that has harmonics in the first frequency band (figure 1, with known front end amplifier components: audio input data to A/D conversion followed by a sample rate conversion to the switching frequency followed by a PWM conversion, column 1, lines 30-47). Since Groves teaches a class D amplifier with a sample rate conversion to select the switching frequency, it would have been obvious to one of ordinary skill in the art at the time of the invention adapt the frequency selecting means of Hoyt with the class D amplifier of Groves to direct a switching frequency in a class D amplifier that will not result in interference by the switching frequency and harmonics in the tuned AM radio band.

As to claim 12, Hoyt teaches a method for using the AM local oscillator as a reference for determining the switching frequency where it is understood in the art the local oscillator is the user tuned element in a heterodyne receiver (column 12, lines 27-29).

As to claims 13, 17, 20 and 21, Hoyt teaches the indicator control means, a multiple clock controller, selects one of several (three shown) output oscillators in

accordance to an algorithm to avoid interference across a predetermined range of tuner frequencies at the receiver (figure 7, column 12, line 56 to column 13, line 11).

As to claims 14 and 19, Hoyt teaches where the controller means changes output oscillator frequency if the input signal (audio output of the AM radio) has interference from the switching output signal (figure 7, column 13, lines 21-23).

As to claims 15 and 18, Hoyt teaches a controller as changing the output oscillator frequency based on an indicator signal, the local oscillator of the tuner (figure 7, column 12, lines 27-29).

As to claim 22, Hoyt teaches a controller that selects one of several indicators, the switching frequency based on an algorithm with reference to the local oscillator of the AM radio (figure 7, column 12, line 27 to column 13, line 23).

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoyt et al. (EP1014566 A2) and Groves (U.S. Patent 6,593,807) and further in view of Lindemann (U.S. Patent 4,180,776).

As to claim 11, Hoyt and Graves teach the switching amplifier as discussed for claim 10. Hoyt and Groves do not teach where the indicator means disables the switching amplifier in response to the tuner indicating that it is in one of a seek mode or scan mode.

Lindemann discloses a typical example that teaches a receiver that utilizes a squelch circuit for deactivating the audio amplifier when the transceiver is not tuned to an active channel. Lindemann teaches the addition of an automatic channel scanning attachment for a CB radio to automatically scan the channels and seek an active channel using the squelch signal to start/stop scanning (figures 2 and 5, column 2, lines 25-44). It would have been obvious to one of ordinary skill in the art at the time of the invention to adapt the audio amplifier of Hoyt and Graves with the audio amplifier control of Lindemann to eliminate audio noise from the receiver when the tuned channel is not active or in the seek/scan mode.

Allowable Subject Matter

5. Claims 1, 2, 3, 4, 7, and 23 are allowed. The following is a statement of reasons for the indication of allowable subject matter:

As to claim 1, the prior art made of record does not teach a switching amplifier for use in proximity to a tuner that has a control outputs including a processor means comprising a sample rate converter for converting the digital input signal to a data rate responsive to the indicator signal.

As to claim 23, the prior art made of record does not teach a method of operating a switching amplifier in proximity to a tuner including responding to a tuner frequency of the tuner *by modifying a sample rate of the input digital signal in response to an indicator signal* if the switching signal causes interference with the input digital signal.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

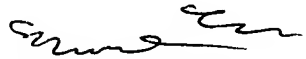
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J Jackson whose telephone number is (703) 305-5291. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (703) 305-4385. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 812-9314 for regular communications and (703) 812-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

BJJ


EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
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